

App. No. 10/594,692
Office Action Dated May 31, 2007

REMARKS

Favorable reconsideration is respectfully requested in view of the above amendments and following remarks. The specification has been amended to address formal issues. Claims 1-5 and 9-10 have been canceled without prejudice or disclaimer. Claims 6-8 have been amended. The limitation in claim 6 concerning the reaction product is supported by for example previous claim 4 and page 6, lines 10-12 of the specification. Claims 7-8 have been amended editorially. Claims 11-17 are new. Claim 11 is supported for example by previous claim 8 and page 6, line 21 of the specification. Claim 12 is supported for example by page 6, lines 24-29 and Example 2 of the specification. Claim 13 is supported for example by Example 2 of the specification. Claims 14 and 15 are supported for example by previous claim 2 and page 5, lines 19-22 of the specification. Claims 16 and 17 are supported for example by previous claim 3 and page 6, lines 1-5 of the specification. No new matter has been added. Claims 6-8 and 11-17 are pending.

Claim Rejections – 35 USC §112/§101

Claims 1-5 have been rejected under 35 USC 101 and 35 USC 112, first paragraph, for being indefinite and because the claimed recitation of a use results in an improper definition of a process. The rejection is rendered moot, as the previous claims have been canceled. Applicants respectfully submit that the new claims are definite and in proper form.

Claim Rejections – 35 USC §112

Claims 6-10 are rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 6-8 have been amended, taking the issues noted in the rejection into account. Therefore, Applicants respectfully submit that claims 6-8 are definite.

Claim Rejections – 35 USC §102

Claims 1-10 are rejected under 35 USC 102(b) as being anticipated by Narin et al. made evident by the teachings of Lahaye et al. (WW; Lahaye, M. et al. Carbohydrate Research, (1994), 262: 115-125. *Chemical characteristics of insoluble glucans from the cell wall of the marine green alga Ulva lactuca (L.) Thuret.*) and Bi et al. (UU; Bi, F. et al. Pak, J. Bot. (1999), 31(1): 193-198. *Studies on aqueous extracts of three green algae as an elicitor of plant defence mechanism.*). Applicants respectfully traverse the rejection.

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Claim 6 is directed to a method for activating plant defense and resistance reactions against biotic or abiotic stresses. Claim 6 requires the step of administering to plants, an effective amount of (1) ulvans extracted from green algae of the genus *Ulva* or *Enteromorpha* or (2) a reaction product obtained from the treatment of green algae of the genus *Ulva* or *Enteromorpha* by hydrolysis or enzymatic hydrolysis. Advantageously, the method prevents losses in yield and a reduction in production quality by protecting against biotic and abiotic stresses, which are present when plants are grown in the field.

Narin is directed to agents which promote the growth of plants in tissue culture, and more particularly, to an anti-vitrification agent. The rejection takes the position that vitrification corresponds to the biotic stresses of claim 6. However, as noted by Narin, vitrification is a very specific phenomenon which is only observed in tissue culture. On the other hand, claim 6 is directed to stresses that are present in the natural environment, as opposed to an *in vitro* environment, during the growth of the plants. Nothing in the reference teaches or even suggests biotic stresses or inoculating the plant with a pathogen. In fact, the reference specifically indicates that the effect of vitrification is obtained by the addition of a chemical compound, as opposed to a pathogen. Accordingly, claim 6 and the dependent claims therefrom are not anticipated by Narin for at least these reasons.

The rejection contends that Bi teaches a method for activating plant defense and resistance against biotic or abiotic stresses comprising applying an effective amount of a powdered extract of *Ulva lactulus* in liquid form to chickpea cotyledons. The rejection further contends that the ulvan was obtained by washing, milling, and sequential extraction in water, dilute sodium hydroxide and hydrochloric acid and ethanol precipitation and freeze-drying, as well as acid hydrolysis.

The rejection seems to assume that the extraction method taught by Bi would result in an effective amount of ulvans for activating plant defense and resistance reactions against biotic or abiotic stresses. However, nothing in Bi teaches or even suggests the composition of the extract, let alone the presence of ulvans. In fact, the method taught by Bi is applied generally to *Codium elongatum* as well as *Caulepra texiflora*. However, neither *Codium elongatum* nor *Caulepra texiflora* even contain any ulvans. Therefore, the reference is far from even identifying the effects of ulvans, let alone teaching or even suggesting the

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administration of an effective amount of ulvans or the reaction product to activate plant defense and resistance reactions against biotic or abiotic stresses as required by claim 6. Accordingly, claim 6 and the dependent claims therefrom are not anticipated by Bi for at least these reasons.

Claims 9 and 10 are rejected under 35 USC 102(b) as being anticipated by Paradossi et al. (VV; Paradossi, G. et al. Macromolecules (2002); 35: 6404-6411. A conformational study on the algal polysaccharide ulvan.) and Lahaye et al. (N). The rejection is rendered moot, as claims 9 and 10 are canceled. Applicants do not concede the correctness of the rejection. Withdrawal of the rejection is respectfully requested.

In view of the above, favorable reconsideration in the form of a notice of allowance is requested. Any questions or concerns regarding this communication can be directed to the attorney-of-record, Douglas P. Mueller, Reg. No. 30,300, at (612) 455.3804.

Respectfully Submitted,

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